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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,701	12/31/2001	Byung-Kyu Lee	030681-352	3883
21839	7590	04/07/2004		
BURNS DOANE SWECKER & MATHIS L L P POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER RICKMAN, HOLLY C	
			ART UNIT 1773	PAPER NUMBER

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,701

Applicant(s)

LEE, BYUNG-KYU

Examiner

Holly Rickman

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/20/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/19/04 has been entered.

Information Disclosure Statement

2. The examiner acknowledges the submission of Japanese reference, JP64055764. The information disclosure statement resubmitted with the communication filed 1/20/04 has been initialed and is included with this communication.

Claim Rejections - 35 USC § 112

3. The rejection of claims 9-10 under 35 U.S.C. 112, second paragraph is withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1773

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The rejection of claims 1-16 under 35 U.S.C. 102(e) as being clearly anticipated by Futamoto et al. (US 6541125) is withdrawn in view of Applicant's amendments.

6. Claims 1-2, 4-6, 9, 12, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Do et al. (US 6537638).

Do et al. disclose a magnetic recording medium having a first underlayer, a second underlayer formed from an fcc material (Ti), a perpendicular magnetic recording layer, and a protective overcoat (see Fig. 1). The reference teaches that a soft magnetic layer can be inserted between the first underlayer and the substrate (col. 3, line 65 to col. 4, line 3). See also Fig. 2.

With respect to the functional language "perpendicular magnetic enhancement" layer and "perpendicular orientation promoting" underlayer set forth in claims 1 and 2, respectively, the layers taught by Do et al. are capable of functioning in the claimed capacity and therefore, meet these functional limitations.

7. Claims 1, 3, 5-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al. (US 5738927).

Nakamura et al. disclose a magnetic recording medium having a substrate, an fcc underlayer and a perpendicular recording layer thereon. The fcc underlayer is made of a material

Art Unit: 1773

such as Au, Pd, or Pt and has a thickness of 20 nm (col. 8, lines 38-45; col. 10, lines 38-41).

The magnetic layer is formed from a CoCrPt alloy.

With respect to the functional language "perpendicular magnetic enhancement" layer and "perpendicular orientation promoting" underlayer set forth in claims 1 and 2, respectively, the layers taught by Nakamura et al. are capable of functioning in the claimed capacity and therefore, meet these functional limitations.

8. Claims 1-3, 5-6, 8, 11-12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Tang et al. (US 5750270).

Tang et al. disclose a magnetic recording medium having a substrate, an fcc underlayer formed from Pt or Pd and a perpendicular recording layer thereon. The fcc underlayer has a thickness of 28-56 nm (col. 11, Table 1). The magnetic layer is formed from a CoCrTa alloy.

With respect to the functional language "perpendicular magnetic enhancement" layer and "perpendicular orientation promoting" underlayer set forth in claims 1 and 2, respectively, the layers taught by Tang et al. are capable of functioning in the claimed capacity and therefore, meet these functional limitations.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1773

10. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Do et al. (US 6537638) *or* Tang et al. (US 5750270) in view of Haratani et al. (US 6420058).

Do et al. and Tang et al. disclose all of the limitations of the claims except for the use of a lubricant layer on top of the disclosed protective layer.

Haratani et al. teach that it is known in the art to deposit a protective layer and a lubricant layer on top of a magnetic recording medium in order to protect the medium surface from contact with the magnetic head (col. 4, lines 48-51).

It would have been obvious to one of ordinary skill in the art at the time of invention to add a lubricant layer to the structure taught by Do et al. or Tang et al. in order to add further protection to the medium surface.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 5738927) in view of Haratani et al. (US 6420058).

Nakamura et al. disclose all of the limitations of the claims except for the use of a lubricant layer on top of the disclosed protective layer.

Haratani et al. teach that it is known in the art to deposit a protective layer and a lubricant layer on top of a magnetic recording medium in order to protect the medium surface from contact with the magnetic head (col. 4, lines 48-51).

It would have been obvious to one of ordinary skill in the art at the time of invention to add a lubricant layer to the structure taught by Nakamura et al. in order to add further protection to the medium surface.

Art Unit: 1773

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Holly Rickman
Primary Examiner
Art Unit 1773

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April 2, 2004